Mouse Semaphorin 6C Antibody

Monoclonal Rat IgG_{2A} Clone # 256631

Catalog Number: MAB2108

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Semaphorin 6C in direct ELISAs and Western blots. In direct ELISAs, 100% cross-reactivity with recombinant human (rh) Semaphorin 6C is observed and no cross-reactivity with rhSemaphorin 3A, 6B, recombinant mouse Semaphorin 3B, 3C, 3E, 3F, 6A, 6D, or 7A is observed.
Source	Monoclonal Rat IgG_{2A} Clone # 256631
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Semaphorin 6C Ala26-Ile602 Accession # Q9WTM3
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Immunohistochemistry	8-25 µg/mL	Immersion fixed frozen sections of mouse embryo (13-15 d.p.c.)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Semaphorin 6C (Sema6C; previously Sema Y) is a 120 kDa member of the Semaphorin family of axon guidance molecules (1-3). The four known Class 6 semaphorins are type I transmembrane glycoproteins that are most like Class 1 invertebrate semaphorins in structure, and exhibit neuropilin-independent binding to specific plexin A receptors (1-3). Amino acid (aa) identity of Class 6 semaphorins is around 40% overall, but 53-64% within the Sema domain. Sema6C is expressed developmentally in subregions of the central and peripheral nervous systems, heart, and kidney, and primarily in skeletal muscle in adults (3, 4). Mouse Sema6C cDNA encodes 931 aa, including a 25 aa signal sequence, a 580 aa extracellular domain (ECD) including the Sema domain, a 21 aa transmembrane sequence and a 305 aa cytoplasmic portion. Alternate exon splicing creates a 923 aa short form (Sema6C.3) that is lacking aa 185-224 within the Sema domain, but contains 32 unique aa inserted at aa 586; postnatally, this form predominates in muscle (2, 3). The long form predominates in brain, especially in areas of increased plasticity (4). Mouse Sema6C ECD shares 98%, 92%, 92%, 92% and 88% aa identity with corresponding rat, human, porcine, equine and canine sequences, respectively. Sema6C, along with Sema6D, is co-expressed with and binds to Plexin A1 (5). This interaction is thought to guide proprioceptive peripheral neurons by repulsion, excluding them from the superficial dorsal horn of the spinal cord (5). Sema6C is downregulated and redistributed following denervation or axotomy, potentially promoting regrowth (4, 6). In muscle, Sema6C is concentrated at neuromuscular junctions (6).

References:

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